The effect of youth employment quotas on the job finding rates of young people in Wallonia

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1. Introduction

1.1. The First Job Agreement program (FJA)

- Launched in April 2000
- Aim : To help young people to find a job in order to prevent them to get stuck in unemployment.
- Obligation for private for-profit companies to have in their labour force a quota of 3% of young people occupied under a FJA.
- Eligibility : all young job seekers under 25 years old.
- Financial incentive for employers which hire unqualified job seekers.
- Open-ended contract or fixed-term contract BUT the FJA lasts at most one year.

1.2. Some facts about the FJA (Bay and al. (2003))

- During the period April 2000 - December 2001, about 70000 young people have been hired under a FJA ($\pm$ 35000 jobs in steady state in 2001).
- The FJA jobs were in majority ($\pm 67\%$) occupied by mid-qualified or qualified young people.
- About one third of young people hired under a FJA directly came from a previous regular job.

2. Aim of the paper

- To evaluate whether or not the FJA program has improved the youth insertion in the labour market, compared to what would have prevailed in the absence of the program.

3. Methodology

- To answer this question, we need to compare :
  - the unemployment exit rates of (different categories) of unemployed job seekers (UJS) when the measure is installed
  - to the ones that would have prevailed in the abscence of the FJA.
- Basic Idea :
  - **If the labour market conditions and the characteristics of the job seekers were the same** :

the exit rates which would have prevailed in the absence of the FJA
=
the exit rates prevailing during the period before the start of the program.

- We can fullfil this **ceteris paribus condition** by reasoning :
  - on the basis of individual data,
  - conditionally to the labour market conditions and the characteristics of the UJS.
  - and by evaluating the effect of the FJA by difference in differences.

- Implementation :

  a- Estimation of job seekers exit rates according to the labour market conditions and their individual characteristics (conditional hazard functions),

    * *before* and *after* the setting up of the FJA,

    * for the *target group* and for a *control group.*

  b- Deduction of the individual effects of the FJA by difference in differences.

  c- Deduction of the aggregate effects for different sub-populations of job seekers, and of the total effect for the entire target group.

4. Data, specification and estimation

4.1. Data

- Sample :
  - Selection criterion : any person less than 30 years old who became job seeker during the third quarter of the years 1998 and 2000. People more than 25 years old constitutes the control group.

- Available data for each individual :
  - Career path, from the month of the selection in the sample to October of the following year (Data STAT 92, ONSS and ONSS-APL).
  - Characteristics of the individual (age, sex, qualification, sub-region, ...).

- Current economic data :
  - Unemployment rates by age, sex, qualification and sub-region.

4.2. Specification and estimation

- The exit rates from unemployment of the job seekers according to their individual characteristics and the labour market conditions are represented by the conditional (discrete) hazard function :

$$\lambda(t, X^{it}) = I\!P\left[T_i = t | T_i \geq t, X^{it}\right], \ \forall\, t = 0, 1, 2, ...$$

- We separately estimate the hazard functions for the 6 sub-populations defined according to sex (man and woman) and qualification (unqualified, mid-qualified and qualified) of the UJS.

- Functional form of the hazard functions estimated by sub-population :

$$\lambda(t, X^{it}; \beta_j) = \frac{e^{X_{it}^{*\prime}\beta_j}}{1 + e^{X_{it}^{*\prime}\beta_j}} \qquad j = 1, ..., 6$$

where β_j is a parameter vector specific to the sub-population j et $X_{it}^{*\prime}\beta_j$ is specified as the following polynomial form :

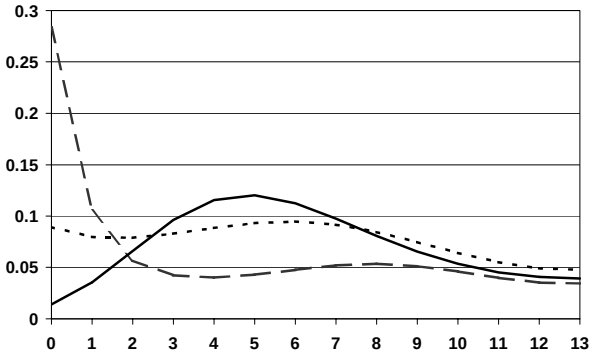
$$\begin{aligned} X_{it}^{*\prime}\beta_j \ = \ & \beta_j^0 + \beta_j^1 Djanv + \beta_j^2 Dfev + \beta_j^3 Dmars + \beta_j^4 Davr + \beta_j^5 Dmai \\ & + \beta_j^6 Djui + \beta_j^7 Djuil + \beta_j^8 Daout + \beta_j^9 Dsept + \beta_j^{10} Doct + \beta_j^{11} Dnov \\ & + \beta_j^{12} t + \beta_j^{13} t^2 + \beta_j^{14} t^3 + \beta_j^{15} t^4 \\ & + \beta_j^{16}(t \times Age_i) + \beta_j^{17}(t^2 \times Age_i) + \beta_j^{18}(t^3 \times Age_i) + \beta_j^{19}(t^4 \times Age_i) \\ & + \beta_j^{20} Age_i + \beta_j^{21} Age_i^2 \\ & + \beta_j^{22} Txcho_{it} + \beta_j^{23} Txcho_{it}^2 + \beta_j^{24}(Txcho_{it} \times Age_i) \\ & + \beta_j^{25} D2000 + \beta_j^{26} D2000\_i25 \end{aligned}$$

- Estimation by maximum likelihood with censored durations which are also partly observed by intervals.

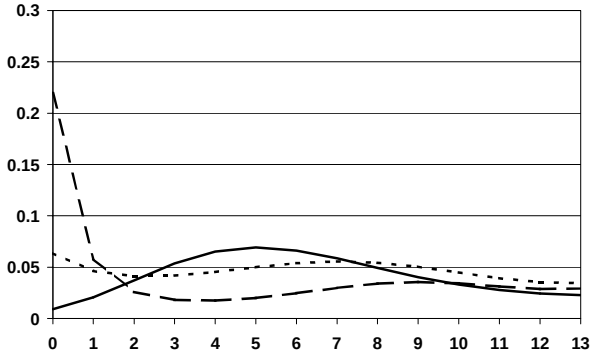
5. Empirical results

5.1. Estimated parameters

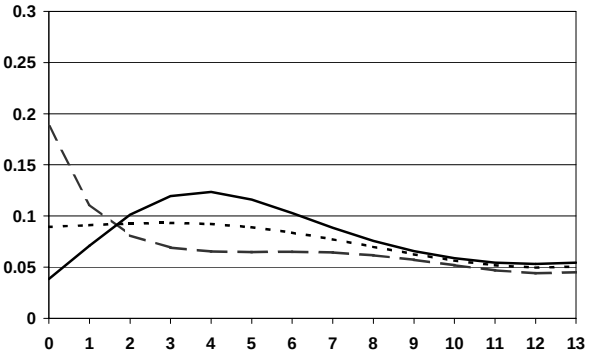
- For any sub-population, significant seasonal effect.
- Profiles of hazard functions according to sub-population and age (average unemployment rate in 2000, without FJA) :



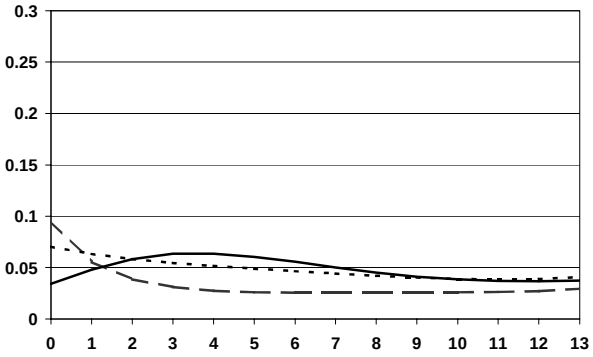
Unqualified man



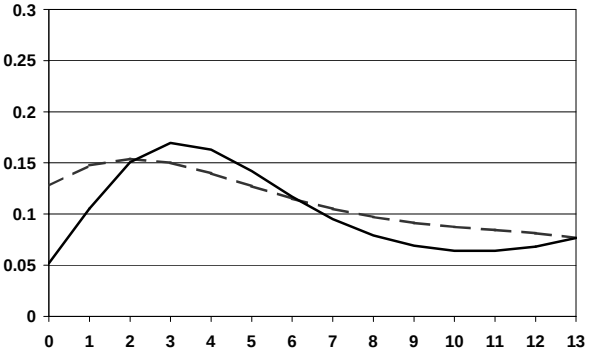
Unqualified woman



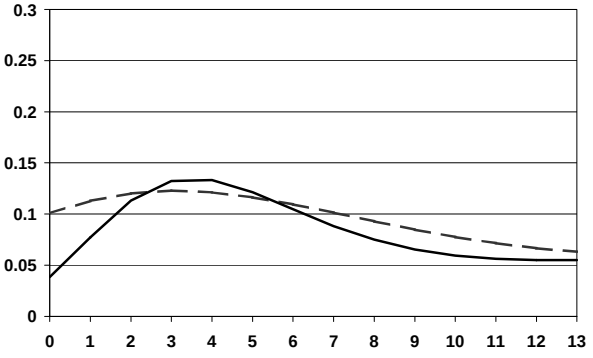
Mid-qualified man



Mid-qualified woman



Qualified man



Qualified woman

- For any sub-population, the unemployment rate plays a negative effect on the exit rates.
- For any sub-population (except mid-qualified man), the negative effect of the unemployment rate declines with age.
- For any sub-population (except unqualified woman), the variable *D2000* is not significant.

- Estimated parameter of the variable *D2000_i25* (= effect of the FJA for the target group) by sub-population :

Sub-population	Parameter	St. Dev.	95% Conf. Int.	P-value
Unqualified man (17 838 ind.)	0.0647	0.0411	[-0.0159, 0.1217]	0.1153
Unqualified woman (11 672 ind.)	-0.0357	0.0545	[-0.1425, 0.0711]	0.5119
Mid-qualified man (19 153 ind.)	0.1303	0.0498	[0.0327, 0.2279]	0.0089
Mid-qualified woman (21 064 ind.)	0.1231	0.0428	[0.0392, 0.2123]	0.0040
Qualified man (11 198 ind.)	0.1284	0.0448	[0.0406, 0.2162]	0.0042
Qualified woman (22 702 ind.)	0.0573	0.0356	[-0.0125, 0.1271]	0.1081

5.2. Estimated effect of the FJA on the median unemployment duration

Median unemployment durations with and without the FJA

	Without FJA (month)	With FJA (month)	%Δ
Global Population (38 672 ind.)	7.30	6.69	-8.4 %
Unqual. Man (6 825 ind.)	6.76	6.20	-8.3 %
Unqual. Woman (4 148 ind.)	14.78*	15.5*	+4.9 %
Mid-qual. Man (7 991 ind.)	6.61	5.61	-15.1 %
Mid-qual. Woman (8 358 ind.)	14.31*	12.10	-15.4%
Qualified Man (3 682 ind.)	3.95	3.33	-15.7%
Qualified Woman (7 668 ind.)	4.78	4.41	-7.7 %

*Extrapolation

5.3. Estimated effect of the FJA on the unemployment exit rates

Unemployment exit rates within 6 and 12 months
with and without the FJA

	Exit within 6 months			Exit within 12 months		
	Without FJA	With FJA	%Δ	Without FJA	With FJA	%Δ
Global Population (38 672 ind.)	44.6	47.1	+5.8	62.9	65.6	+4.2
Unqual. Man (6 825 ind.)	47.2	49.2	+4.3	63.6	65.8	+3.4
Unqual. Woman (4 148 ind.)	29.7	28.9	-2.8	45.3	44.2	-2.4
Mid-qual. Man (7 991 ind.)	47.3	51.5	+8.9	65.8	70.2	+6.7
Mid-qual. Woman (8 358 ind.)	30.2	33.2	+10.0	45.9	49.8	+8.4
Qualified Man (3 682 ind.)	59.0	63.2	+7.1	82.1	85.3	+3.8
Qualified Woman (7 668 ind.)	56.1	58.0	+3.3	78.1	79.7	+2.1

5.4. FJA Exits : Additional Exits ?

Part of the FJA Exits comparable to actual additional jobs within 12 months

	Without FJA	With FJA	Additional Exits	FJA Exits	% Actual additional jobs
Global Population (38 672 ind.)	24 338	25 353	1 015	4 233	24.0 %
Unqual. Man (6 825 ind.)	4 344	4 491	147	664	22.1 %
Unqual. Woman (4 148 ind.)	1 880	1 835	-45	190	0.0 %
Mid-qual. Man (7 991 ind.)	5 260	5 611	351	1172	29.9 %
Mid-qual. Woman (8 358 ind.)	3 840	4 163	323	639	50.5 %
Qualified Man (3 682 ind.)	3 024	3 139	115	666	17.3 %
Qualified Woman (7 668 ind.)	5 990	6 113	123	890	13.8 %

Part of the FJA Exits comparable to actual additional jobs within 6 months

	Without FJA	With FJA	Additional Exits	FJA Exits	% Actual Additional jobs
Global Population (38 672 ind.)	17 229	18 222	993	3 008	33.0 %
Unqual. Man (6 825 ind.)	3 223	3 361	138	421	32.8 %
Unqual. Woman (4 148 ind.)	1 234	1 199	-35	99	0.0 %
Mid-qual. Man (7 991 ind.)	3 781	4 117	336	819	41.0 %
Mid-qual. Woman (8 358 ind.)	2 520	2 774	254	378	67.2 %
Qualified Man (3 682 ind.)	2 171	2 326	155	561	27.6 %
Qualified Woman (7 668 ind.)	3 024	3 139	115	666	17.3 %